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SEQUENCE LISTING

<110> LOCARNINI, STEPHEN A
BARTHOLOMEUSZ, ANGELINE I
AYE, THEIN T
DEMAN, ROBERT A

<120> VIRAL VARIANTS AND METHODS FOR DETECTING SAME

<130> 2551-28

<140> 09/306,420
<141> 1999-05-06

<150> PCT/AU97/00520
<151> 1997-08-15

<150> PO3519
<151> 1996-11-08

<160> 57

<170> PatentIn Ver. 2.0

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Ser Ser Asn Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr
  1               5                  10                  15

cat att cct ctt cat cct gct gct atg cct cat ctt ctt att ggt tct   96
His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser
             20                  25                  30

tct gga tta tca agg tat gtt gcc cgt ttg tcc tct aat tcc agg atc   144
Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile
         35                  40                  45

aac aac aac atg caa aac ctg cac gac tcc tgc tca agg caa ctc tac   192
Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr
     50                  55                  60

gtt tcc ctc atg ttg ctg tac aaa acc tac gga gag aaa ttg cac ctg   240
Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu
 65                  70                  75                  80

tat tcc cat ccc atc gtc ctg ggc ttt cgc aaa ata cct atg gga gtg   288
Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val
                 85                  90                  95

ggc ctc agt ccg ttt ctc ttg gct cag ttt act agt gcc att tgt tca   336
Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser
            100                 105                 110

gtg gtt cgt agg gct ttc ccc cac tgt ttg gct ttc agc tat atg gat   384
Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp
        115                 120                 125

gat gtg gta ttg ggg gcc aag tct gta cag cat cgt gag gcc ctt tat   432
Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr
    130                 135                 140

acc gct gtt acc aat ttt ctt ttg tct ctg ggt ata cat tta aac cct   480
Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro
145                 150                 155                 160

aac aaa aca aaa aga tgg ggt tat tcc cta aac ttc atg ggt tac ata   528
Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile
                165                 170                 175

att gga agt tgg gga aca ttg c                                    550
Ile Gly Ser Trp Gly Thr Leu
            180
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His Ile Pro Leu His Pro Ala Ala Met Pro His Leu Leu Ile Gly Ser
20 25 30

Ser Gly Leu Ser Arg Tyr Val Ala Arg Leu Ser Ser Asn Ser Arg Ile
35 40 45

Asn Asn Asn Met Gln Asn Leu His Asp Ser Cys Ser Arg Gln Leu Tyr
50 55 60

Val Ser Leu Met Leu Leu Tyr Lys Thr Tyr Gly Glu Lys Leu His Leu
65 70 75 80

Tyr Ser His Pro Ile Val Leu Gly Phe Arg Lys Ile Pro Met Gly Val
85 90 95

Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser
100 105 110

Val Val Arg Arg Ala Phe Pro His Cys Leu Ala Phe Ser Tyr Met Asp
115 120 125

Asp Val Val Leu Gly Ala Lys Ser Val Gln His Arg Glu Ala Leu Tyr
130 135 140

Thr Ala Val Thr Asn Phe Leu Leu Ser Leu Gly Ile His Leu Asn Pro
145 150 155 160

Asn Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met Gly Tyr Ile
165 170 175

Ile Gly Ser Trp Gly Thr Leu
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    1               5                  10                  15

ata ttc ctc ttc atc ctg ctg cta tgc ctc atc ttc tta ttg gtt ctt   97
Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu
             20                  25                  30

ctg gat tat caa ggt atg ttg ccc gtt tgt cct cta att cca gga tca   145
Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly Ser
         35                  40                  45

aca aca aca tgc aaa acc tgc acg act cct gct caa ggc aac tct acg   193
Thr Thr Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Thr
     50                  55                  60

ttt ccc tca tgt tgc tgt aca aaa cct acg gag aga aat tgc acc tgt   241
Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr Cys
 65                  70                  75                  80

att ccc atc cca tcg tcc tgg gct ttc gca aaa tac cta tgg gag tgg   289
Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp
                 85                  90                  95

gcc tca gtc cgt ttc tct tgg ctc agt tta cta gtg cca ttt gtt cag   337
Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln
            100                 105                 110

tgg ttc gta ggg ctt tcc ccc act gtt tgg ctt tca gct ata tgg atg   385
Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met
        115                 120                 125

atg tgg tat tgg ggg cca agt ctg tac agc atc gtg agg ccc ttt ata   433
Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe Ile
    130                 135                 140

ccg ctg tta cca att ttc ttt tgt ctc tgg gta tac att taa acc cta   481
Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile     Thr Leu
145                 150                 155

aca aaa caa aaa gat ggg gtt att ccc taa act tca tgg gtt aca taa   529
Thr Lys Gln Lys Asp Gly Val Ile Pro     Thr Ser Trp Val Thr
160                 165                 170

ttg gaa gtt ggg gaa cat tgc                                      550
Leu Glu Val Gly Glu His Cys
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Leu Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile
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Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu
20 25 30

Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly Ser
35 40 45

Thr Thr Thr Cys Lys Thr Cys Thr Thr Pro Ala Gln Gly Asn Ser Thr
50 55 60

Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Glu Arg Asn Cys Thr Cys
65 70 75 80

Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys Tyr Leu Trp Glu Trp
85 90 95

Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro Phe Val Gln
100 105 110

Trp Phe Val Gly Leu Ser Pro Thr Val Trp Leu Ser Ala Ile Trp Met
115 120 125

Met Trp Tyr Trp Gly Pro Ser Leu Tyr Ser Ile Val Arg Pro Phe Ile
130 135 140

Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile
145 150 155

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<400> 21
Thr Leu Thr Lys Gln Lys Asp Gly Val Ile Pro
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Thr Ser Trp Val Thr
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Leu Glu Val Gly Glu His Cys
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Leu Ser Pro Phe Leu Leu Ala Gln Phe
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Ala Gln Phe Thr Ser Ala Ile Xaa Ser
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Leu Ser Xaa Phe Leu Xaa Ala Gln Phe Thr Ser Ala Xaa Xaa
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20 25 30

Gly Leu Xaa Arg Tyr Val Ala Arg Leu Ser Ser Xaa Ser Xaa Xaa Xaa
35 40 45

Asn Xaa Gln Xaa Xaa Xaa Xaa Xaa Xaa Leu His Xaa Xaa Cys Ser Arg
50 55 60

Xaa Leu Tyr Val Ser Leu Xaa Leu Leu Tyr Xaa Thr Xaa Gly Xaa Lys
65 70 75 80

Leu His Leu Xaa Xaa His Pro Ile Xaa Leu Gly Phe Arg Lys Xaa Pro
85 90 95

Met Gly Xaa Gly Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala
100 105 110

Ile Xaa Xaa Xaa Xaa Xaa Arg Ala Phe Xaa His Cys Xaa Xaa Phe Xaa
115 120 125

Tyr Met Asp Asp Xaa Val Leu Gly Ala Xaa Xaa Xaa Xaa His Xaa Glu
130 135 140

Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Leu Xaa Xaa Gly Ile His
145 150 155 160

Leu Asn Pro Xaa Lys Thr Lys Arg Trp Gly Tyr Ser Leu Asn Phe Met
165 170 175

Gly Tyr Xaa Ile Gly
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Tyr Met Asp Asp
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Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly
1 5 10

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Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly
1 5 10

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Val Phe Ala Tyr Met Asp Asp Leu Val Leu Gly
1 5 10

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<400> 34
Ile Tyr Gln Tyr Met Asp Asp Leu Tyr Val Gly
1 5 10

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Ala Arg Trp Ala Ala Phe Glu Gln Leu Leu Ala Asp Phe Pro Glu Ala
20 25 30

Ala

<210> 36
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Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Ile Leu
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Gly Phe Arg Lys Ile Pro Met Gly Leu Gly Leu Ser Leu Phe Leu Met
            20                  25                  30

Ala Gln Phe Thr Ser Ala Ile Cys Ser
         35                  40
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Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Ile Leu
  1               5                  10                  15

Gly Phe Arg Lys Ile Pro Met Gly Val Gly Leu Ser Pro Phe Leu Met
            20                  25                  30

Ala Gln Phe Thr Ser Ala Ile Cys Ser
         35                  40
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<400> 38
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Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Ile Leu
  1               5                  10                  15

Gly Leu Arg Lys Ile Pro Met Gly Val Gly Leu Ser Pro Phe Leu Met
            20                  25                  30

Ala Gln Phe Thr Ser Ala Ile Cys Ser
         35                  40
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Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Val Leu
  1               5                  10                  15

Gly Phe Arg Lys Ile Pro Met Gly Val Gly Leu Ser Pro Phe Leu Leu
            20                  25                  30
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Ala Gln Phe Thr Ser Ala Leu Cys Ser
35 40

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Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly Ala Lys Thr
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<221> VARIANT
<222> (15)
<223> Xaa = Val or Gly

<400> 41
Xaa His Pro Ile Xaa Leu Gly Phe Arg Lys Xaa Pro Met Gly Xaa Gly
1 5 10 15

Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Cys Ser
20 25 30

<210> 42
<211> 40
<212> PRT
<213> Hepatitis B virus

<220>
<221> VARIANT

<222> (1)
<223> Xaa = Gln or Lys

<220>
<221> VARIANT
<222> (3)
<223> Xaa = Tyr or Phe

<220>
<221> VARIANT
<222> (5)
<223> Xaa = Arg or Trp or Glu

<220>
<221> VARIANT
<222> (10)
<223> Xaa = Tyr or Leu

<220>
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<222> (11)
<223> Xaa = Ser or Ala

<220>
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<222> (15)
<223> Xaa = Ile or Val

<220>
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<222> (18)
<223> Xaa = Phe or Leu

<220>
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<222> (21)
<223> Xaa = Ile or Leu

<220>
<221> VARIANT
<222> (25)
<223> Xaa = Leu or Val or Glu

<220>
<221> VARIANT
<222> (29)
<223> Xaa = Pro or Leu

<220>
<221> VARIANT
<222> (32)
<223> Xaa = Leu or Met

<220>
<221> VARIANT
<222> (39)
<223> Xaa = Ile or Leu

<220>
<221> VARIANT
<222> (40)
<223> Xaa = Cys or Leu

<400> 42
Xaa Thr Xaa Gly Xaa Lys Leu His Leu Xaa Xaa His Pro Ile Xaa Leu
1 5 10 15

Gly Xaa Arg Lys Xaa Pro Met Gly Xaa Gly Leu Ser Xaa Phe Leu Xaa
20 25 30

Ala Gln Phe Thr Ser Ala Xaa Xaa
35 40

<210> 43
<211> 14
<212> PRT
<213> Hepatitis B virus

<220>
<221> VARIANT
<222> (1)
<223> Xaa = Ala or Val

<220>
<221> VARIANT
<222> (3)
<223> Xaa = Ser or Ala

<220>
<221> VARIANT
<222> (5)
<223> Xaa = Met or Ile or Val

<220>
<221> VARIANT
<222> (8)
<223> Xaa = Val or Leu or Met

<220>
<221> VARIANT
<222> (13)
<223> Xaa = Lys or Arg

<220>
<221> VARIANT
<222> (14)
<223> Xaa = Ser or Thr

<400> 43
Xaa Phe Xaa Tyr Xaa Asp Asp Xaa Val Leu Gly Ala Xaa Xaa
1 5 10

<210> 44
<211> 31
<212> PRT
<213> Hepatitis B virus

<220>
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<222> (1)
<223> Xaa = Ser or Ala

<220>
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<222> (5)
<223> Xaa = Ile or Val

<220>
<221> VARIANT
<222> (11)
<223> Xaa = Ile or Leu

<220>
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<222> (15)
<223> Xaa = Val or Gly

<220>
<221> VARIANT
<222> (30)
<223> Xaa = Cys or Leu

<400> 44
Xaa His Pro Ile Xaa Leu Gly Phe Arg Lys Xaa Pro Met Gly Xaa Gly
1 5 10 15

Leu Ser Pro Phe Leu Leu Ala Gln Phe Thr Ser Ala Ile Xaa Ser
20 25 30

<210> 45
<211> 14
<212> PRT
<213> Hepatitis B virus

<220>
<221> VARIANT
<222> (1)
<223> Xaa = Ala or Val

<220>
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<222> (3)
<223> Xaa = Ser or Ala

<220>

<221> VARIANT
<222> (8)
<223> Xaa = Val or Leu or Met

<220>
<221> VARIANT
<222> (13)
<223> Xaa = Lys or Arg

<220>
<221> VARIANT
<222> (14)
<223> Xaa = Ser or Thr

<400> 45
Xaa Phe Xaa Tyr Met Asp Asp Xaa Val Leu Gly Ala Xaa Xaa
1 5 10

<210> 46
<211> 11
<212> PRT
<213> Hepatitis B virus

<400> 46
Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly
1 5 10

<210> 47
<211> 11
<212> PRT
<213> Hepatitis B virus

<400> 47
Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly
1 5 10

<210> 48
<211> 11
<212> PRT
<213> Hepatitis B virus

<220>
<221> VARIANT
<222> (5)
<223> Xaa = Val or Ile

<400> 48
Ala Phe Ser Tyr Xaa Asp Asp Val Val Leu Gly
1 5 10

<210> 49
<211> 11
<212> PRT
<213> Hepatitis B virus

<400> 49
Ala Phe Ser Tyr Met Asp Asp Val Val Leu Gly
1 5 10

<210> 50
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 50
Ser Asp Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr His
1 5 10 15

<210> 51
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 51
Ser Asp Leu Ser Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr His
1 5 10 15

<210> 52
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 52
Thr Asp Leu Gln Trp Leu Ser Leu Asp Val Ser Ala Ala Phe Tyr His
1 5 10 15

<210> 53
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 53
Lys Lys Lys Ser Val Thr Val Leu Asp Val Gly Asp Ala Tyr Phe Ser
1 5 10 15

<210> 54

<211> 41
<212> PRT
<213> Hepatitis B virus

<400> 54
Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Ile Leu
1 5 10 15

Gly Phe Arg Lys Ile Pro Met Gly Val Gly Leu Ser Pro Phe Leu Leu
20 25 30

Ala Gln Phe Thr Ser Ala Ile Cys Ser
35 40

<210> 55
<211> 41
<212> PRT
<213> Hepatitis B virus

<400> 55
Gln Thr Phe Gly Arg Lys Leu His Leu Tyr Ser His Pro Ile Ile Leu
1 5 10 15

Gly Phe Arg Lys Ile Pro Met Gly Leu Gly Leu Ser Leu Phe Leu Met
20 25 30

Ala Gln Phe Thr Ser Ala Ile Cys Ser
35 40

<210> 56
<211> 41
<212> PRT
<213> Hepatitis B virus

<400> 56
Lys Thr Tyr Gly Arg Lys Leu His Leu Leu Ala His Pro Phe Ile Met
1 5 10 15

Gly Phe Arg Lys Leu Phe Met Gly Val Gly Leu Ser Pro Phe Leu Leu
20 25 30

Ala Gln Phe Thr Ser Ala Leu Ala Ser
35 40

<210> 57
<211> 27
<212> PRT
<213> Hepatitis B virus

<400> 57
Arg Tyr Gln Tyr Asn Val Leu Pro Gln Gly Trp Lys Gly Ser Pro Ala

1 5 10 15

Ile Phe Gln Ser Ser Met Thr Lys Ile Leu Glu
20 25